

Sanitary Diaphragm Valve

Manually operated

Description

The type 673 is a compact valve with many features which make it ideal for pharmaceutical and bio-processing applications.

Standard Features

- Compact design
- Ultem® 1000 handwheel
- Stainless steel bonnet with sanitary internals
- Internal adjustable travel stop (U.S. Pat. 5 377 956)
- Adjustable minimum flow regulator
- Autoclavable
- Visual position indicator
- FDA compliant diaphragms
- 316L stainless steel body
- Triclamp®, O.D. Tubing, ISO, and DIN end connections
- Sizes 1/2" - 2"

Available Options

Special connections

Hose barb, tube extensions, Swagelok®, Cajon VCR®, Ingold®, and others available upon request.

Fabrications

Cluster valve assemblies for both horizontal and vertical orientations, Zero Static T-valves, Duplex, Multiported, Tank Bottom, and custom fabrications upon request.

Materials

AL-6XN®, Hastelloy®, Titanium®, and others available upon request.

Bonnet Options

Sealed bonnet, "V" notch vent plug, extended handwheel, and others available upon request.

Typical Applications

- Pharmaceutical manufacturing
- Bioprocessing
- Cosmetic
- Brewery Service
- Food and Beverage
- Semiconductor
- High Purity Chemicals



Type 673

Type 673 Technical Data

Size (Inches)	Nominal diameter (mm)	Working pressure (psi)	Body configuration D=straight through (weir)	C _v -value (gpm)		Weight (lbs)
				ISO connection	O.D. Tubing	
1/2	15	0 - 150	D		-	2.9
3/4	20	0 - 150	D		5.1	2.9
1	25	0 - 150	D		14.3	2.9
1 1/4	32	0 - 150	D		-	6.0
1 1/2	40	0 - 150	D		34.5	6.0
2	50	0 - 150	D		59.2	10.3

All pressures are gauge pressures when applied upstream. The C_v values vary due to differences in valve construction (i.e., Port size, body material, diaphragm material, etc.)

Working pressure: 0 - 150 psi

Max. perm. Temperature of working medium: 302°F (depending on diaphragm material/cycle time)

The valve will seal against flow in either direction up to a working pressure of 150 psi (gauge pressure).

Body Configuration	Ref.no.
Tank bottom valve body	B
2-way valve body	D
2-way angled valve body	E
Multiported valve body	M
Zero Static T-Valve	T
U-bend	U

Diaphragm material	Ref.no.
2nd generation, modified Teflon® with Ethylene-propylene backing 2-piece molded closed	TFM/EPDM 5E
2nd generation, modified Teflon® with Silicone backing 2-piece molded closed	TFM/VMQ 5S
Ethylene-propylene Rubber for saturated steam max 302° F	EPDM 13
Ethylene-propylene Rubber for saturated steam max 302° F	EPDM 16
2nd generation, modified Teflon® with Ethylene-propylene backing (2-piece)	TFM/EPDM 50
2nd generation, modified Teflon® with Ethylene-propylene backing	TFM/EPDM 52

Connection	Ref.no.
DIN	0
DIN 11850/Series 1	16
DIN 11850/Series 2	17
DIN 11850/Series 3	18
Butt weld O.D. Tubing	59
Sizes 1/4-3/8" 20 gauge .035" wall	
Sizes 1/2-3" 16 gauge .065" wall	
Sizes 4" 14 gauge .083" wall	
ISO	60
Schedule 10 pipe	63
Tri-clamp®	80
O.D. Tubing by Triclam®	93
Extended O.D. Tubing	94
Extended O.D. Tubing by Triclam®	95

All diaphragms listed conform to the FDA code of Federal Regulations paragraph 177.2600 of section 21.

Control function	Ref.no.
Manually operated	0

Body material	Ref.no.
Investment cast body	
Stainless steel 316 L \geq 1.4435 (BN2) Fe < 0.5%	32
Stainless steel 1.4539 (UNS N 08904)	33
Forged Body	
Stainless steel 316 L \geq 1.4435 (ASTM A 182)	40
Stainless steel 316 L \geq 1.4435 (BN2) Fe < 0.5%	42
Machined block	
Stainless steel 316 L \geq 1.4435 (ASTMA 479)	41
Special versions	91

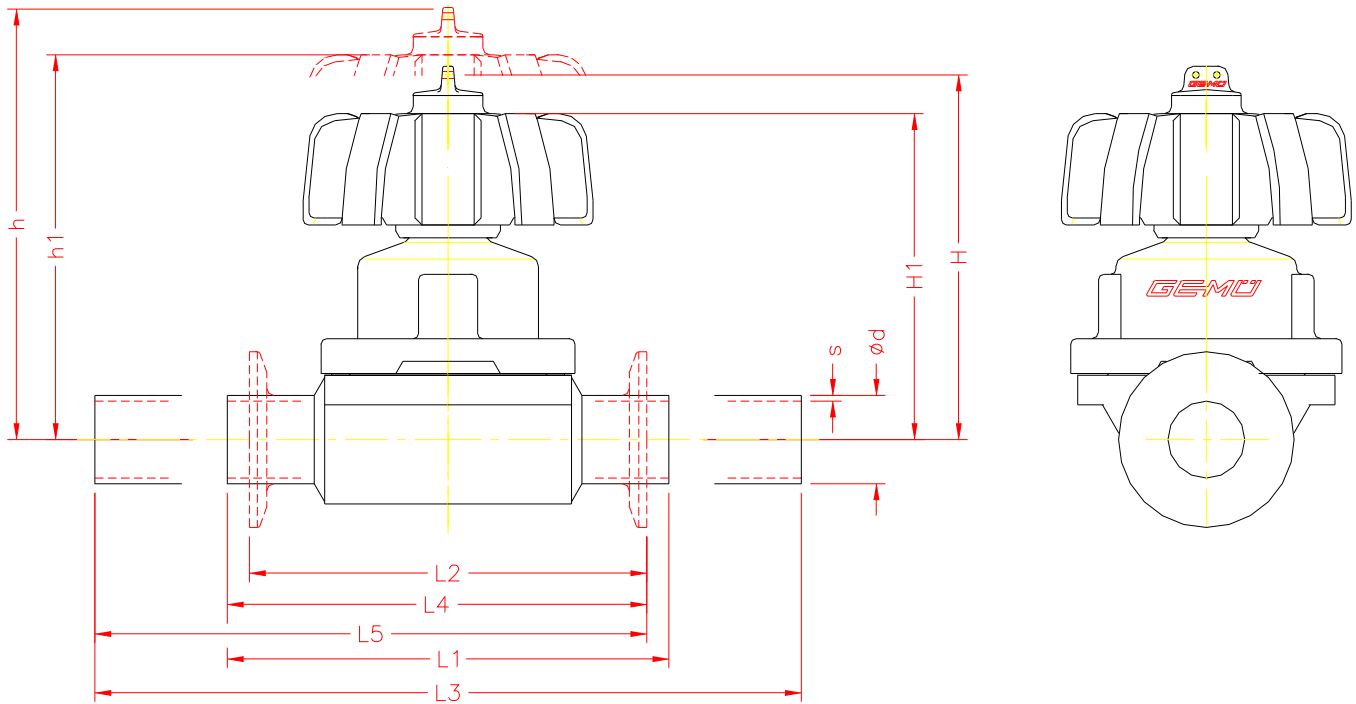
Surface finish		Ra Average [Note (1)]		Ra Max		Ref.no.
μ -in.	BPE Surface Designation	μ -in.	μ m	μ -in.	μ m	
32	Mechanical					3
25	Mechanical	SFV3	25	0.625	30	1502
20	E-pol	SFV6	20	0.500	25	1508
20	Mechanical	SFV2	20	0.500	25	1507
15	E-pol	SFV5	15	0.375	20	1537
11	Mechanical	SFV1	15	0.375	20	1536
10	E-pol	SFV4	10	0.250	15	1516

GENERAL NOTE: All Ra readings are taken across the grain.
NOTE: (1) The average Ra is derived from two readings taken at different locations.

Special Versions	Ref.no.
Special versions	UXXXX

Order Example	-673	015	U	80	41	13	0		040	94	1537	
Type of valve	-673											
Size DN		015										
Body configuration			U									
Connection (valve body)				80								
Body material					41							
Diaphragm material						13						
Control function							0					
Actuator size												
Locking device												
Pipe main size									040			
Pipe main connection										94		
Surface finish											1537	
Special versions (XXXX)												

Type 673 Dimensional Data



Take Out Dimensions for Standard Connections

Size	DN	Units	Con. Ref. No.		(59)	(80)	(94)	(93)	(95)
			Ød	s	L1	L2	L3	L4	L5
1/2	15	mm	12.70	1.65	120.00	101.60	184.15	110.80	142.88
		in	0.500	0.065	4.724	4.000	7.250	4.362	5.625
3/4	20	mm	19.05	1.65	120.00	101.60	190.50	110.80	146.05
		in	0.750	0.065	4.724	4.000	7.500	4.362	5.750
1	25	mm	25.40	1.65	120.00	114.30	203.20	117.15	158.75
		in	1.000	0.065	4.724	4.500	8.000	4.612	6.250
1 1/2	40	mm	38.10	1.65	153.00	139.70	234.95	146.35	187.33
		in	1.500	0.065	6.024	5.500	9.250	5.762	7.375
2	50	mm	50.80	1.65	173.00	158.75	266.70	165.88	212.73
		in	2.000	0.065	6.811	6.250	10.500	6.531	8.375

Drain Angles

Size	DN	Degrees
1/2	15	46°
3/4	20	55°
1	25	60°
1 1/4	32	65°
1 1/2	40	65°
2	50	70°

Drain angles are for BS O.D. Tubing only.

- L1 = Connection Code 59 = Standard butt-weld
- L2 = Connection Code 80 = Standard clamp
- L3 = Connection Code 94 = Standard butt-weld extension (AWF)
- L4 = Connection Code 93 = Standard clamp X butt-weld
- L5 = Connection Code 95 = Standard clamp X butt-weld extension (AWF)

Optional Spigot Dimensions

Connection Ref. No.		60		0		16		17		18		37		
Size	DN	L	d	s	d	s	d	s	d	s	d	s	d	s
1/2"	15	120	21,3	1,6	18	1,5	18	1	19	1,5	20	2	-	-
3/4"	20	120	26,9	1,6	22	1,5	22	1	23	1,5	24	2	-	-
1"	25	120	33,7	2,0	28	1,5	28	1	29	1,5	30	2	25,0	1,2
1 1/4"	32	153	42,4	2,0	34	1,5	34	1	35	1,5	36	2	33,7	1,2
1 1/2"	40	153	48,3	2,0	40	1,5	40	1	41	1,5	42	2	38,0	1,2
2"	50	173	60,3	2,3	52	1,5	52	1	53	1,5	54	2	51,0	1,2

Dimensions

Size	DN	Units	H	H1	h	h1	ØB	f
1/2	15	mm	101.0	88.5	110.0	97.5	90.0	40.0
		in	3.98	3.48	4.33	3.84	3.54	1.57
3/4	20	mm	104.0	91.5	113.0	100.5	90.0	40.0
		in	4.09	3.60	4.45	3.96	3.54	1.57
1	25	mm	107.0	94.5	116.0	103.5	90.0	40.0
		in	4.21	3.72	4.57	4.07	3.54	1.57
1 1/4	32	mm	125.5	111.5	139.5	125.5	114.0	68.0
		in	4.94	4.39	5.49	4.94	4.49	2.68
1 1/2	40	mm	127.5	113.5	141.5	127.5	114.0	75.0
		in	5.02	4.47	5.57	5.02	4.49	2.95
2	50	mm	146.0	133.0	165.0	152.0	140.0	90.0
		in	5.75	5.24	6.50	5.98	5.51	3.54

Type 673 Dimensional Data

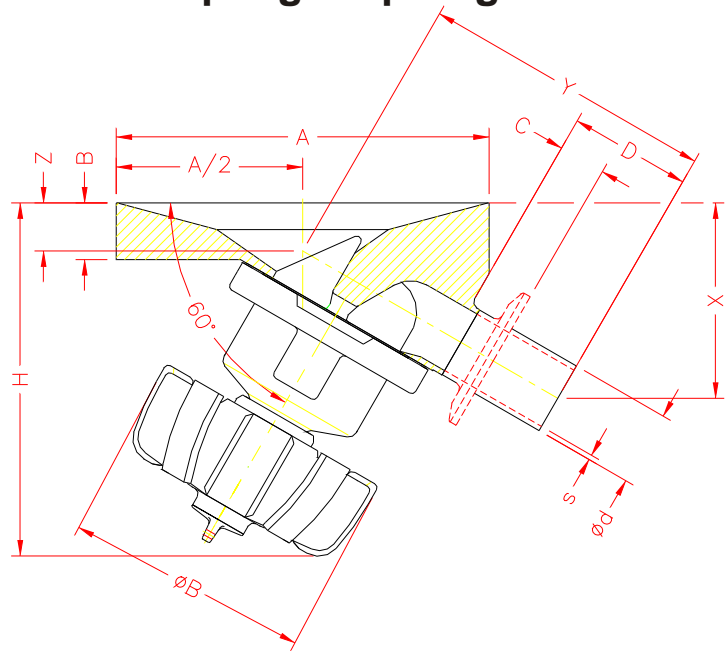
GEMÜ® Tank Bottom / Side Sampling Diaphragm Valve

Standard Features

- Sterile design
- Mechanical parts isolated from processes
- Designed to minimize fluid flow resistance
- Maximum drainage, leaving virtually no residue
- Pocket-free interior surface with no entrapment areas
- Body machined from 316L stainless steel bar stock ASME SA-479 (UNS S31 603)
- Complies with ASME Boiler & Pressure Vessel code requirements, section VIII Division #1

Typical Applications

- Media fill and transfer vessels
- CIP (*clean-in-place*) tanks
- Bioreactor & Fermentation vessels
- Water for Injection storage vessels (WFI)
- Sterile receivers
- Any process vessels used in pharmaceutical / bioprocessing applications



Size	DN	59												
		Ød	s	A	A/2	B	C	D	X	Y	Z	ØB	H	
1/2	15	mm	12.70	1.65	127.00	63.50	19.30	16.06	41.46	72.11	96.56	23.83	90.00	120.60
		in	0.500	0.065	5.000	2.500	0.760	0.632	1.632	2.839	3.802	0.938	3.543	4.748
3/4	20	mm	19.05	1.65	127.00	63.50	19.30	16.06	41.46	69.35	98.39	21.08	90.00	120.60
		in	0.750	0.065	5.000	2.500	0.760	0.632	1.632	2.730	3.874	0.830	3.543	4.748
1	25	mm	25.4	1.65	127.00	63.50	19.30	16.06	41.46	66.50	100.30	16.35	90.00	120.60
		in	1.000	0.065	5.000	2.500	0.760	0.632	1.632	2.618	3.949	0.644	3.543	4.748
1 1/2	40	mm	38.1	1.65	177.80	88.90	22.22	17.46	42.86	77.73	122.23	16.62	114.00	129.70
		in	1.500	0.065	7.000	3.500	0.875	0.687	1.687	3.060	4.812	0.654	4.488	5.106
2	50	mm	50.8	1.65	203.20	101.60	25.40	17.46	42.86	84.41	133.01	17.90	140.00	175.40
		in	2.000	0.065	8.000	4.000	1.000	0.687	1.687	3.323	5.237	0.705	5.512	6.906
2 1/2	65	mm	63.5	1.65	203.20	101.60	25.40	17.46	42.86	79.02	136.62	10.72	140.00	175.40
		in	2.500	0.065	8.000	4.000	1.000	0.687	1.687	3.111	5.379	0.422	5.512	6.906

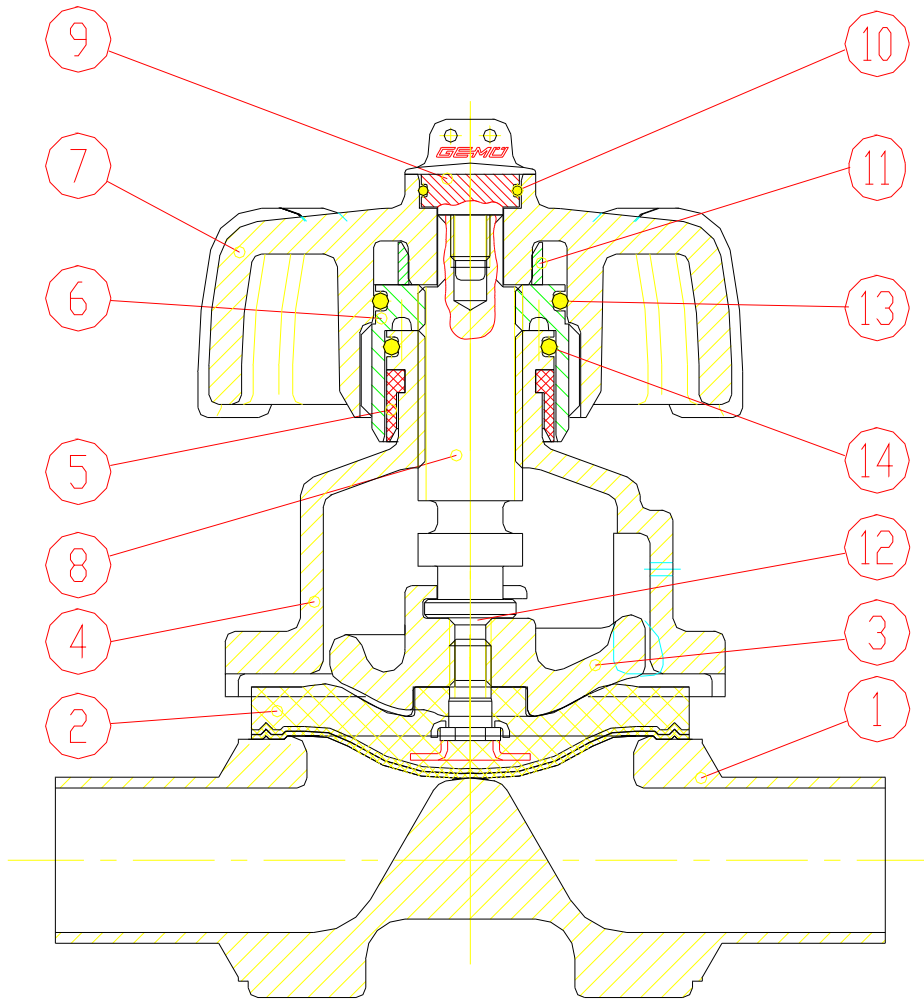
TOL ±1mm Note: Dimension subject to change

Size	1/4	3/8	1/2	3/4	1	1 1/4	2	2 1/2	3	4
DN	8	10	15	20	25	40	50	65	80	100

Order Example	-673	025	B	80	41	13	0				1537
Type of valve	-673										
Size DN		025									
Body configuration			B								
Connection (valve body)				80							
Body material					41						
Diaphragm material						13					
Control function							0				
Actuator size											
Locking device											
Pipe main size											
Pipe main connection											
Surface finish											1537
Special version (XXXX)											



Type 673 Spare Parts



ITEM PART

- 1 Valve body
- 2 Process diaphragm
- 3 Compressor
- 4 Bonnet
- 5 Indicator ring
- 6 Travel stop
- 7 Hand wheel
- 10 O-ring
- 11 Support ring
- 12 Disk
- 13 O-ring
- 14 O-ring